

**Listing of Claims:**

This listing of claims reflects all claim amendments and replaces all prior versions, and listings, of claims in the application. In brief, applicants have retained claims 26-37, without amendment, and canceled claims 38-43, without prejudice, relative to the previous listing of claims.

1-25. (Canceled)

26. (Previously Presented) A system for performing a multiplexed experiment, comprising:

a set of particles each having light polarizing properties in accordance with an optically detectable code pattern, the code patterns of at least two of the particles being distinct; and

two or more distinct samples and/or reagents connected to the particles in correspondence with the distinct code patterns, so that the set of particles can be analyzed in the same multiplexed experiment by identifying samples and/or reagents according to the code patterns of the respective particles to which the samples and/or reagents are connected.

27. (Previously Presented) The system of claim 26, wherein each particle includes a substrate and at least one layer of a material with light polarizing capability disposed on the substrate, and wherein a part of the substrate is cleared of the at least one layer of material in accordance with a code pattern.

28. (Previously Presented) The system of claim 27, wherein each code pattern is configured to be recognized in a wavelength range of light, and wherein the substrate has low absorption in the wavelength range.

29. (Previously Presented) The system of claim 28, wherein the at least one layer of material has linear light polarization capability in the wavelength range of light and low absorption of light in other wavelength ranges.

30. (Previously Presented) The system of claim 27, wherein each particle includes at least one cladding layer over the at least one layer of material.

31. (Previously Presented) The system of claim 30, wherein the substrate has a thickness of about 0.01 to 1 mm, wherein the at least one layer of material has a thickness of about 0.1-100 microns, and wherein the at least one cladding layer has a thickness of about 1-300 microns.

32. (Previously Presented) The system of claim 27, wherein the at least one layer of material includes a first layer and a second layer of material each having light polarizing capability.

33. (Previously Presented) The system of claim 32, wherein each of the first and second layers of material defines a respective polarizing plane, and wherein the respective polarizing planes are substantially perpendicular to one another.

34. (Previously Presented) The system of claim 32, wherein a portion of the substrate is cleared of the second layer of material.

35. (Previously Presented) The system of claim 34, wherein each of the first and second layers of material defines a respective pattern, and wherein the respective patterns substantially coincide.

36. (Previously Presented) The system of claim 32, wherein each particle includes respective first and second cladding layers disposed over the respective first and second layers of material.

37. (Previously Presented) The system of claim 26, wherein the particles are connected to distinct populations of biological cells such that distinct code patterns correspond with distinct cell populations.

38-43. (Canceled)